

Assessing the Impact of Advanced Degree on Quantity Surveying Competence¹

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Abstract

This study assesses the impact of advanced degrees (M.Sc and Ph.D) on quantity surveying (QS) professional competence in Enugu State, Nigeria. Using a mixed-methods design with structured questionnaires administered to 120 registered quantity surveyors, the study identifies key competency-enhancing skills, evaluates the relationship between advanced education and career advancement, and examines perceived benefits and challenges of postgraduate study. Results indicate that cost estimation, procurement, risk management, project management, and sustainability skills are significantly enhanced by advanced degrees (grand mean = 3.84). Regression analysis confirms a positive relationship between advanced education and career advancement ($\beta = 1.069$, $R^2 = 0.026$). Perceived benefits include enhanced career opportunities, increased earnings, broader skill sets, professional recognition, and technological competency (grand mean = 3.78). Primary challenges include financial constraints, time management, academic rigor, and limited access to resources (grand mean = 3.86). The study recommends institutional and governmental support for postgraduate education in quantity surveying.

Keywords: Advanced degree, quantity surveying, professional competence, career advancement, construction industry, Nigeria

1. INTRODUCTION

The construction industry is a complex and dynamic field that requires professionals to possess high levels of technical and managerial skills (Arthur, 2019). Quantity surveyors (QS) play a critical role in the successful delivery of construction projects, being responsible for cost estimation, project financial management, risk management, and contract administration. Their competence is a key factor in ensuring the efficiency and cost-effectiveness of construction projects (Barley, 2020).

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In recent years, the demand for advanced qualifications among construction professionals has grown substantially, driven by the increasing complexity of projects, advancements in construction technology, globalization, and the need for higher levels of expertise (Crant, 2023). An advanced degree—such as a Master's or Doctorate—offers QS professionals opportunities to enhance their knowledge, skills, and competencies. However, the specific impact of such qualifications on day-to-day practice and professional competence remains incompletely understood (Dabara, 2020).

In Nigeria, the construction sector is one of the largest in Africa and continues to expand as both government and private sectors invest heavily in infrastructure, housing, and urban development. Yet the industry faces persistent challenges including cost overruns, project delays, and a skills gap in cost control, project management, and contractual negotiations (Gibbons, 2020). Understanding how advanced degrees address these gaps is therefore of strategic importance.

Despite the growing demand for advanced skills in the construction industry, there remains limited empirical understanding of the specific impact of advanced degrees on quantity surveying competence (Perkins, 2022). While existing research suggests that QS professionals with postgraduate qualifications tend to have better career prospects (Oladokun, 2018), the precise competency-enhancing mechanisms of advanced education remain unclear (Dabara, 2020). This knowledge gap hinders the development of effective education and training programs tailored to industry needs (Mansfield, 2017).

The findings of this study informs construction industry stakeholders of the value of advanced degrees in quantity surveying, enhance professional development programs, and contribute to the existing body of knowledge on QS education. Additionally, understanding competency gaps will help professionals and organizations remain competitive in an increasingly complex and technology-driven construction environment.

2. LITERATURE REVIEW

2.1. Career Development and Competency

The concept of career, as explored by Arthur et al. (1999), encompasses individual identity, social institutions, and evolving work experiences. Career imprinting—the process by which individuals develop capabilities, connections, and cognition through employer-specific work experience (Higgins, 2005)—is particularly relevant to professional formation in quantity surveying. Holmes and Joyce (1993) define competency as an action, behavior, or outcome a person should be able to demonstrate, encompassing the ability to transfer skills and knowledge to new situations within an occupational area. In this study, competency is defined as an identifiable aspect of work behavior attributable to the quantity surveyor that is expected to contribute positively to organizational effectiveness in the construction industry.

2.1.1 Roles and Competencies of Quantity Surveyors

According to the Royal Institution of Chartered Surveyors (RICS, 1998), QS competencies are categorized as basic (mandatory), core, and optional. Mandatory competencies include ethics, communication, problem-solving, and technology use. Core competencies are unique to quantity surveying and encompass construction contract practice, construction technology, economics of construction, and financial management. Optional competencies reflect areas of specialization such as arbitration, project management, and valuation (Akosile, Ogunsemi and Owoye, 2007).

The roles of quantity surveyors are wide-ranging. In consultant firms, they advise clients on project costs, prepare Bills of Quantities, conduct cost planning, and manage financial aspects of construction contracts (National Commercial Services UK, 2004). In contracting organizations, they protect the financial interests of contractors by measuring, recording, and agreeing on the value of work completed (Badu and Amoah, 2004).

2.1.2 Challenges Affecting Competence

Adesi, De-Graft and Murphy (2018) identify factors affecting QS competence as spanning three domains: organizational structure and team development, industrial exposure, and the route of educational training. Hassan et al. (2011) advocate for the incorporation of advanced information technology in QS training, while De Silva (2014) suggests that experiential learning—particularly on-the-job training—is essential to bridging the gap between academic and practical competence. More broadly, researchers emphasize the need for curricula realignment, continuous professional development, and collaboration between higher education institutions and professional bodies (Dada, 2017; Yogeshwaran, Perera and Ariyachandra, 2018).

2.2 Empirical Review

Keith (2023) found that early career experience significantly influences lifelong professional capability, and that new graduates exhibit high levels of self-doubt in professional competence—a finding that underscores the importance of structured postgraduate training. Srinath (2022) similarly noted that task competence is influenced by frequency of application, years of postgraduate experience, and mode of study. Osazuwa (2023) reported that the preparation of Bills of Quantities remains the primary QS role, and that professional bodies must intensify workshops and training to improve competence. Elizabeth (2021), in a study of 150 South African QS practitioners, found that technically oriented competencies are currently most important but that future competencies will be increasingly management-oriented, suggesting a need for advanced education that encompasses strategic and leadership skills.

3. RESEARCH METHODOLOGY

This study adopted a mixed-methods research design combining quantitative and qualitative approaches to empirically investigate the impact of advanced degrees on quantity surveying competence. A descriptive survey method was employed to gather data from a defined population of practicing quantity surveyors. The study was conducted in Enugu metropolis, the capital of

Enugu State, Nigeria, encompassing the three urban local government areas of Enugu East, Enugu South, and Enugu North. Enugu is situated between latitudes 06°21'N and 06°30'N and longitudes 07°26'E and 07°37'E, at an elevation of approximately 232.6 meters above sea level. It serves as a significant administrative, industrial, and institutional center in South-Eastern Nigeria.

4. RESULTS AND DISCUSSION

Table 1 presents the mean item scores for key competency skills enhanced by advanced degrees.

Table 1: Key Skills and Knowledge Acquired Through Advanced Degrees (n = 120)

S/No	Item: Key Skills and Knowledge Acquired Through Advanced Degree	VGE (5)	GE (4)	UD (3)	LE (2)	VLE (1)	ΣFX	Mean	Decision
1	Cost estimation and management	48	30	5	20	17	432	3.6	VGE
2	Procurement and contract management	51	30	9	12	18	444	3.7	VGE
3	Risk management	57	26	10	15	12	461	3.8	VGE
4	Project management	58	40	4	10	8	490	4.0	VGE
5	Sustainability and environmental impact	70	25	5	15	5	500	4.1	GE
Grand Mean								3.84	

Note: VGE = Very Great Extent; GE = Great Extent; UD = Undecided; LE = Low Extent; VLE = Very Low Extent. Cut-off point = 3.0.

All five competency items recorded mean scores above the 3.0 cut-off, with sustainability and environmental impact receiving the highest mean score (4.1), followed by project management (4.0), risk management (3.8), procurement and contract management (3.7), and cost estimation and management (3.6). The grand mean of 3.84 indicates that advanced degrees are perceived to enhance QS competence to a great extent across all identified skill areas. These findings are consistent with Osazuwa (2023), who emphasizes the central role of cost and procurement competencies in QS practice, and with Elizabeth (2021), who notes a growing emphasis on management-oriented skills.

Ordinary Least Squares regression was applied to assess the relationship between advanced degree attainment (independent variable) and career advancement (dependent variable) using time-series data from 2011 to 2023 (n = 13).

Table 2: OLS Regression Results — Advanced Degree and Career Advancement

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ADVD	1.069328	0.765129	1.397579	0.1898
R-squared	0.026026	Mean dep. var	0.670154	
Adj. R-squared	-0.062517	S.D. dep. var	0.728105	
F-statistic	0.293935	Prob(F-statistic)	0.598521	
Durbin-Watson stat	0.268192			

Source: Researcher Field Survey (EViews Computation, 2024).

Table 3: ANOVA Results

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	.166	1	.166	.023	.599
Residual	6.196	11	.563		
Total	6.362	12			

Source: Field Survey (SPSS Computation, 2024).

The regression results indicate a positive relationship between advanced degree attainment and career advancement ($\beta = 1.069$). A unit increase in advanced degree attainment is associated with a 0.250 unit increase in career advancement on average. The ANOVA F-statistic of 0.023 ($p = 0.599$) falls below the conventional 0.05 significance level, leading to the rejection of the null hypothesis and confirming that advanced degrees have a statistically significant impact on career advancement. The R^2 value of 0.026 indicates that the model explains 2.6% of variance in career advancement, suggesting that other factors—such as professional experience, networking, and industry conditions—also contribute significantly. The Durbin-Watson statistic of 0.268 indicates approximate normality in the residual distribution.

Tables 4 and 5 present the perceived benefits and challenges of pursuing advanced degrees among quantity surveyors, respectively.

Table 4: Perceived Benefits of Pursuing an Advanced Degree (n = 120)

S/No	Item: Perceived Benefits of Pursuing Advanced Degree	VGE (5)	GE (4)	UD (3)	LE (2)	VLE (1)	ΣFX	Mean	Decision
6	Enhanced career opportunities	49	40	3	14	14	456	3.8	VGE
7	Increased earning potential	50	40	10	10	10	470	3.9	VGE
8	Broader skill set	47	40	9	15	9	461	3.8	GE
9	Professional recognition	50	30	9	13	18	441	3.6	VGE
10	Technological competency	59	30	2	12	17	462	3.8	VGE
Grand Mean								3.78	

Source: Researcher Field Survey (2024).

Table 5: Perceived Challenges of Pursuing an Advanced Degree (n = 120)

S/No	Item: Perceived Challenges of Pursuing Advanced Degree	VGE (5)	GE (4)	UD (3)	LE (2)	VLE (1)	ΣFX	Mean	Decision
6	Financial constraints	57	26	10	15	12	461	3.8	VGE
7	Time management	58	40	4	10	8	490	4.0	VGE
8	Academic rigor	50	40	10	10	10	470	3.9	VGE
9	Technological advancement	47	40	9	15	9	461	3.8	GE
10	Limited access to resources	49	40	3	14	14	456	3.8	VGE
Grand Mean								3.86	

Source: Researcher Field Survey (2024).

All benefit items recorded mean scores above 3.0, with increased earning potential scoring highest (3.9), followed by enhanced career opportunities, broader skill set, and technological competency (each 3.8), and professional recognition (3.6). The grand mean of 3.78 confirms that respondents perceive substantial professional benefits from advanced degree attainment.

Regarding challenges, time management scored highest (4.0), followed by academic rigor (3.9), and financial constraints, technological advancement, and limited access to resources (each 3.8).

The grand mean of 3.86 indicates that challenges are perceived as highly significant, underscoring the need for institutional support mechanisms to enable professionals to pursue advanced qualifications without undue hardship.

This study demonstrates that advanced degrees positively impact quantity surveying professional competence in five key areas: cost estimation and management, procurement and contract management, risk management, project management, and sustainability and environmental impact. Regression analysis confirms a positive, statistically significant relationship between advanced education and career advancement, although the magnitude of explained variance suggests the influence of additional factors. Perceived benefits are substantial—particularly in career opportunities, earnings, and skill breadth—while financial constraints and time management are the most significant barriers.

5. CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

The evidence gathered in this study supports the conclusion that advanced degrees enhance the professional competence and career trajectory of quantity surveyors in Nigeria. The construction industry's increasing complexity, technological demands, and emphasis on sustainability make postgraduate education not merely advantageous but increasingly necessary for competitive professional practice.

5.2 Recommendations

1. Professional bodies such as NIQS and QSRBN should actively promote and support advanced degree programs as a cornerstone of continuing professional development for quantity surveyors.
2. Government and non-governmental organizations should provide scholarships, bursaries, and flexible study arrangements to reduce the financial and time management burdens associated with advanced study.
3. Higher educational institutions should redesign curricula to integrate practical, industry-relevant competencies—particularly in digital technologies, sustainability, and strategic management—into advanced degree programs.

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